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Army Oil Analysis Program

One Corps Serving The Army and the Nation

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Purpose

- To give an understanding of the oil analysis program and what is required to ensure that oil sampling from applicable equipment is successfully accomplished.

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Objectives

- Condition Monitoring Program
- Improve equipment reliability/readiness
- Lower maintenance costs
- Reduce resource usage
- Maintenance diagnostic tool
  - predictive maintenance

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It's not new

- Railroads in the 1940s

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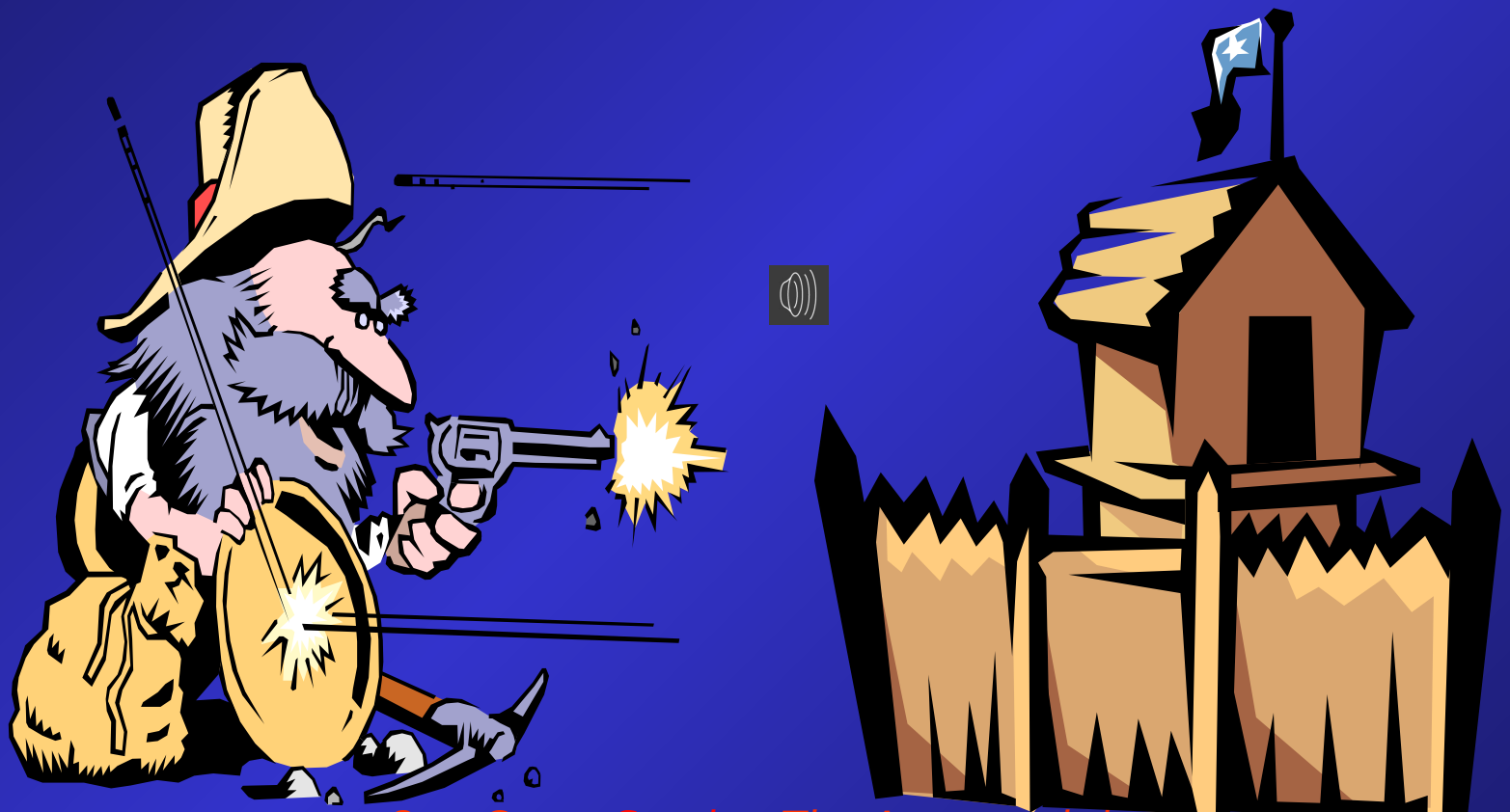
... and



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… and there

- are now 28 laboratories worldwide

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People

One of the most important parts of the program.

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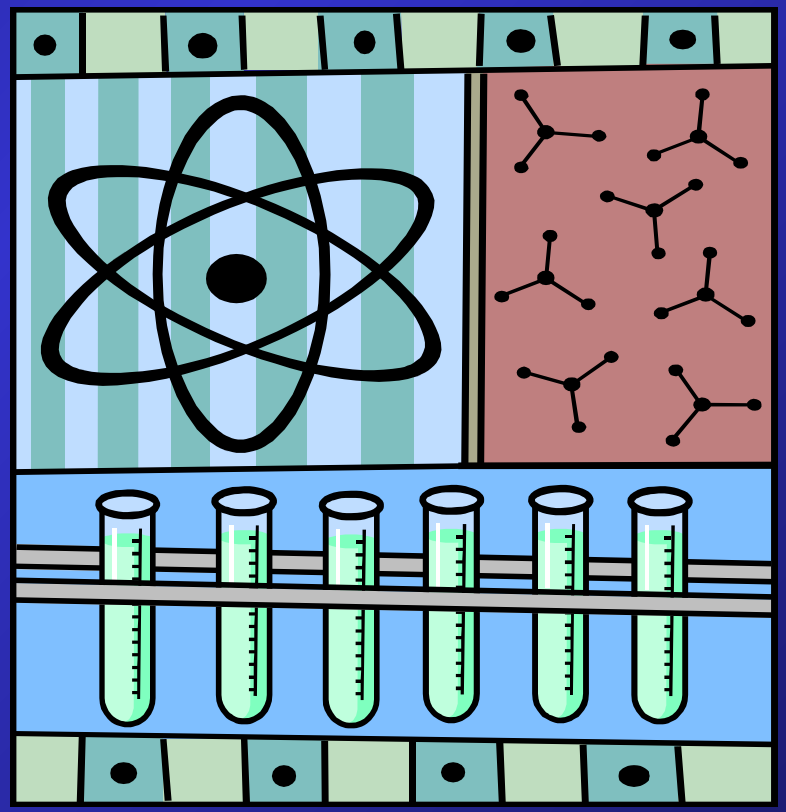
Methods of Analysis

- Spectrometric
- Viscomentry
- Crackle Test
- Ferrography
- Infrared Spectrosopy



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Elements Tested For

- Aluminum
- Antimony
- Barium
- Boron
- Calcium
- Chromium
- Copper
- Iron
- Lead
- Magnesium
- Molybdenum
- Nickel
- Phosphorus
- Potassium
- Silicon
- Silver
- Sodium
- Tin
- Titanium
- Zinc

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Intervals

- DA PAM 738-750, Chapter 4
- ER 750-1-1, Appendix D
- EP 750-1-1, Appendix E
- Local Maintenance Plan

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What To Sample

- All equipment in DA Pam 738-750, Chapter 4
- Construction, Watercraft, and other equip.:
  - diesel engines w/oil cap. of 5 gal. or more
  - associated automatic transmissions
  - hydraulic systems w/fluid cap. of 5 gal. or more excluding brake systems

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Sampling Methods

- Valve
- Pump
- Drain

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Contamination

- It’s the most frequent problem that affects sample integrity.
  - Wear metals
  - Water
  - Unusual color
  - Particular matter

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Problems ID'd

- Faulty air-induction systems
- Leaking cooling systems
- Loose cross-over fuel lines
- Abnormal wear rates of moving metal parts

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Early Detection

- Lowers maintenance costs
- Decreases downtime
- Improves mission capability

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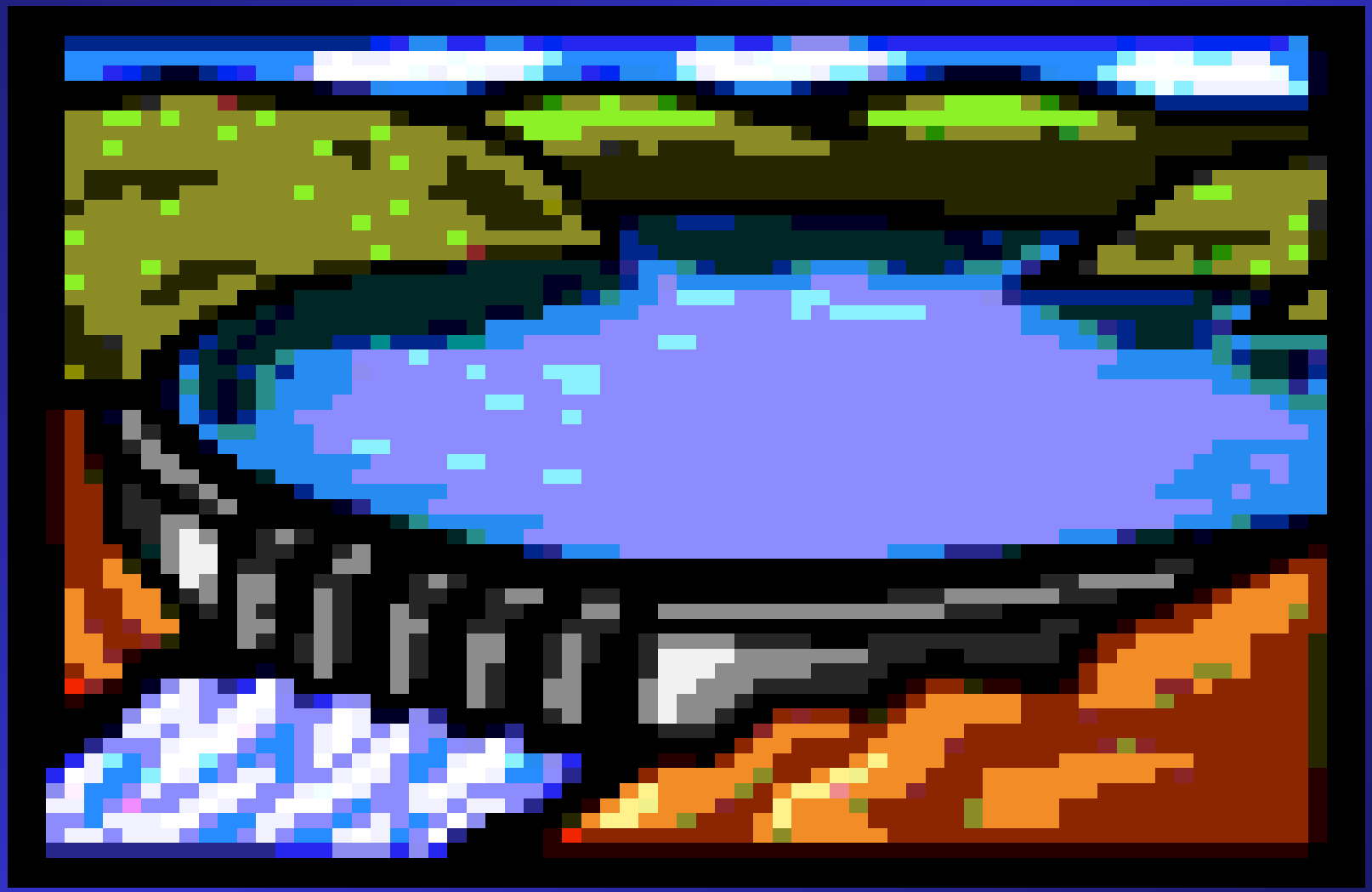
Structures



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Information

- Laboratory technician uses it to determine:
  - Quality of lubricant/hydraulic fluids
  - Recommendations to solve problems
  - How to increase operational time of equipment and components

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Saves Money

- Oil/lubricant products
- Oil/lubricant filters
- Disposal costs of oil/lubricants and filters
- Repairs by early detection
- Downtime

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AOAP Monitor

- Needs to attend a one day training session at an AOAP site to be certified.
- Needs to be appointed by letter by the district commander.

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F.Y.I.

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